

High-Mu Twin Triode

9-PIN MINIATURE TYPE

For Use in Mobile-Communications Equipment
Operating from 6-Cell Storage-Battery Systems

GENERAL DATA

Electrical:

Heater Characteristics and Ratings (*Absolute-Maximum Values*):

Voltage (AC or DC)^a 13.5 ± 1.5 volts
Current at heater volts = 13.5 0.150 amp
Peak heater-cathode voltage (Each unit):

Heater negative with
respect to cathode 100 max. volts
Heater positive with
respect to cathode 100 max. volts

Direct Interelectrode Capacitances (Approx.):

| | Without External Shield | With External Shield ^b | |
|--|-------------------------------|---|-----|
| Grid-Drive Operation: | | | |
| Grid to plate (Each unit) . . | 1.6 | 1.6 | μμf |
| Grid to cathode and heater (Each unit) | 2.5 | 2.5 | μμf |
| Plate to cathode and heater (Unit No.1) | 0.45 | 1.2 | μμf |
| Plate to cathode and heater (Unit No.2) | 0.38 | 1.3 | μμf |

Cathode-Drive Operation:

| | | | |
|---|------|-------------------|-----|
| Cathode to plate (Unit No.1) | 0.2 | 0.18 ^d | μμf |
| Cathode to plate (Unit No.2) | 0.24 | 0.2 ^d | μμf |
| Cathode to grid and heater (Each unit) | 5 | 5 ^d | μμf |
| Plate to grid and heater (Unit No.1) | 1.9 | 2.7 ^d | μμf |
| Plate to grid and heater (Unit No.2) | 1.8 | 2.7 ^d | μμf |
| Heater to cathode (Each unit) | 2.8 | 2.8 ^c | μμf |
| Plate to plate | 0.24 | - | μμf |

Characteristics, Class A₁ Amplifier (Each Unit):

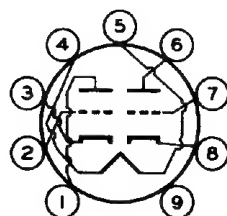
| | | |
|---|-------|-------|
| Heater Voltage | 13.5 | volts |
| Plate Supply Voltage | 250 | volts |
| Cathode Resistor | 200 | ohms |
| Amplification Factor | 60 | |
| Plate Resistance (Approx.) | 10900 | ohms |
| Transconductance | 5500 | μmhos |
| Plate Current | 10 | ma |
| Grid Voltage (Approx.) for plate $\mu_a = 10$. . | -12 | volts |



Mechanical:

Operating Position Any
 Type of Cathodes Coated Unipotential
 Maximum Overall Length 2-3/16"
 Maximum Seated Length 1-15/16"
 Length, Base Seat to Bulb Top (Excluding tip). 1-9/16" \pm 3/32"
 Diameter 0.750" to 0.875"
 Dimensional Outline See *General Section*
 Bulb T6-1/2
 Base Small-Button Noval 9-Pin (JEDEC No.E9-1)
 Basing Designation for BOTTOM VIEW 9EP

Pin 1 - Plate of
 Unit No.2
 Pin 2 - Grid of
 Unit No.2
 Pin 3 - Cathode of
 Unit No.2
 Pin 4 - Heater
 Pin 5 - Heater



Pin 6 - Plate of
 Unit No.1
 Pin 7 - Grid of
 Unit No.1
 Pin 8 - Cathode of
 Unit No.1
 Pin 9 - Do Not Use

AMPLIFIER — Class A₁

Values are for Each Unit

Maximum Ratings, Absolute-Maximum Values:

PLATE VOLTAGE 330 max. volts
 GRID VOLTAGE:
 Negative-bias value 55 max. volts
 Positive-bias value 0 max. volts
 PLATE DISSIPATION 2.75 max. watts
 BULB TEMPERATURE (At hottest
 point on bulb surface) 180 max. °C

Maximum Circuit Values:

Grid-Circuit Resistance:
 For fixed-bias operation 0.25 max. megohm
 For cathode-bias operation 1 max. megohm

- ^a Heater will withstand momentary excursions from 11.0 to 16.0 volts.
- ^b With external shield JEDEC No.315 connected to cathode of unit under test except as noted.
- ^c With external shield JEDEC No.315 connected to ground.
- ^d With external shield JEDEC No.315 connected to grid of unit under test.

SPECIAL RATINGS AND PERFORMANCE DATA

Heater-Cycling:

Cycles of Intermittent Operation 1160 min. cycles
 This test is performed on a sample lot of tubes from each production run under the following conditions: Heater volts = 19.5 cycled one minute on and two minutes off; heater 135 volts negative with respect to cathode; all other elements



connected to ground. At the end of this test, tubes are tested for heater-cathode shorts and open circuits.

Low-Frequency Vibration Performance:

This test is performed on a sample lot of tubes from each production run under the following conditions: Units connected in parallel, heater volts = 13.5, plate-supply volts = 250, grid volts = -3, plate load resistor (ohms) = 2000, and vibrational acceleration = 2.5 g at 25 cps. In this test, the rms output voltage must not exceed 150 millivolts.

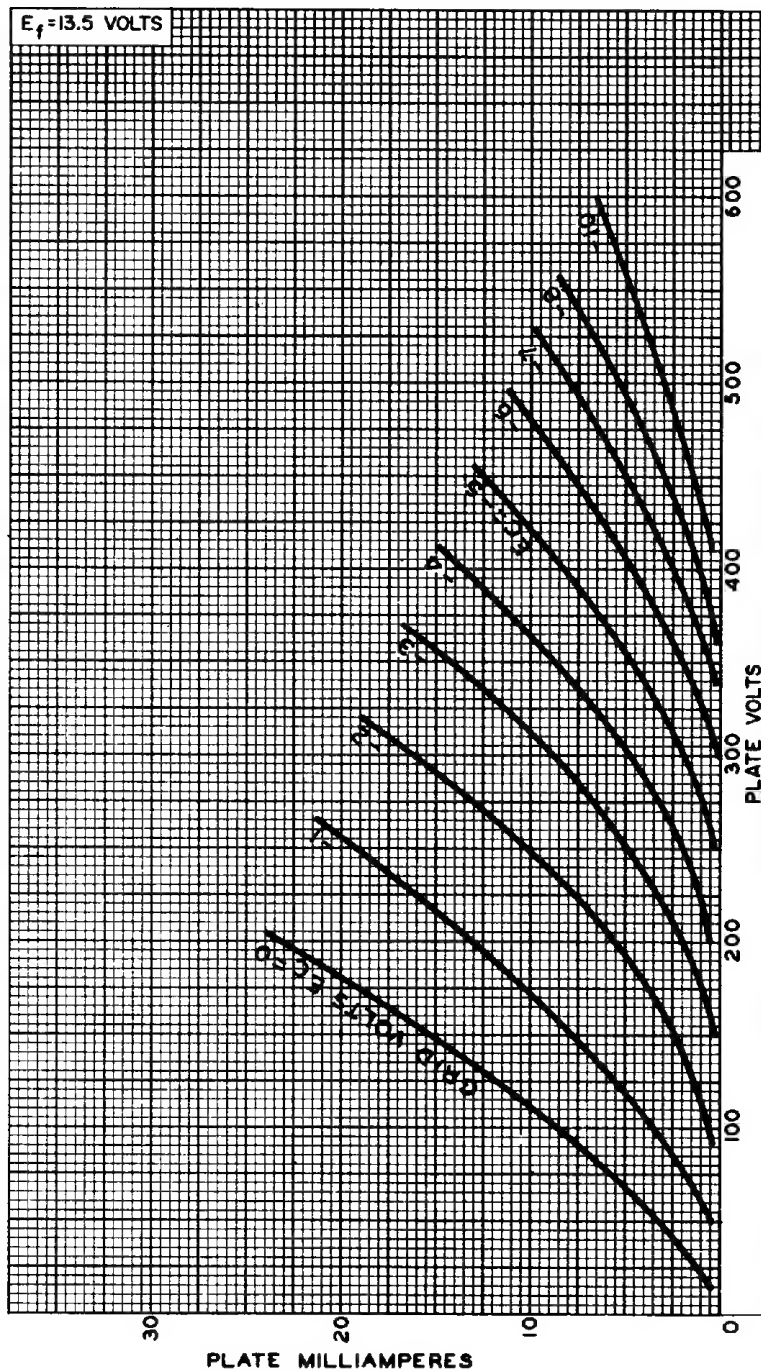
500-Hour Intermittent Life Performance:

This test is performed on a sample lot of tubes from each production run to insure high quality of the individual tube and to guard against epidemic failures. Life testing is conducted under the following conditions: Heater volts = 15.0 and maximum-rated plate dissipation.



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AVERAGE PLATE CHARACTERISTICS



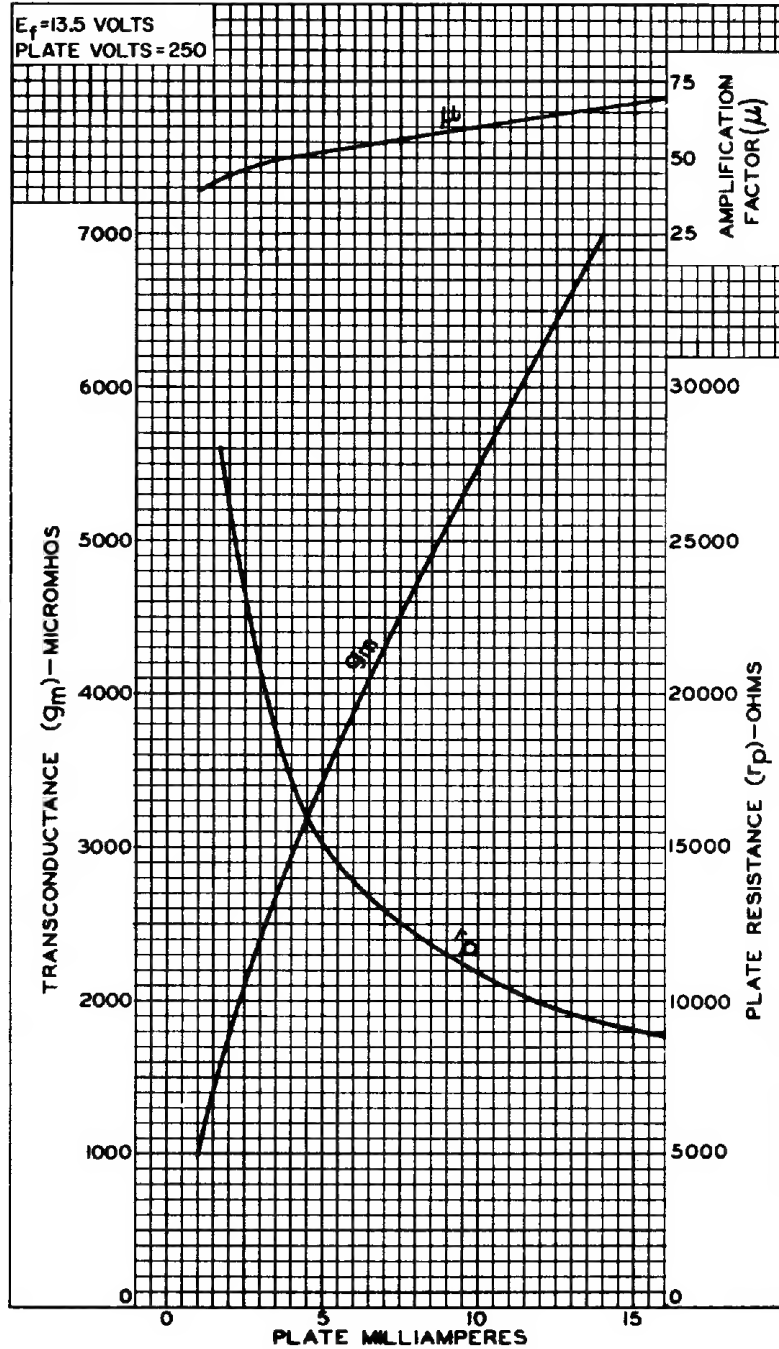
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Electron Tube Division

Harrison, N. J.



AVERAGE CHARACTERISTICS



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